

CLAIMS

The invention claimed is:

1. A method of transferring an object from a source device to a destination
5 device over an ad hoc communication channel, said method comprising the
steps of:
 - (a) discovering a data processing device communicating with
said destination device over said communication channel;
 - (b) identifying a discovered data processing device that
facilitates at least one of a remotely directed search for
and transfer of a data object;
 - 10 (c) searching an identified data processing device for said
object;
 - (d) selecting an identified data processing device that is a
location of said object as said source device; and
 - (e) transferring said object from said source device to said
destination device over said communication channel.
2. The method of claim 1 wherein the step of discovering a data processing
20 device communicating with said destination device over said communication
channel comprises the steps of:
 - (a) transmitting a paging message over said communication
channel; and
 - (b) including an address of a device responding to said
paging message in a device list.
- 25 3. The method of claim 1 wherein the step of identifying a discovered data
processing device that facilitates at least one of a remotely directed search for
and transfer of a data object comprises the steps of:

(a) transmitting an object search and transfer service query to
a discovered data processing device; and

(b) including an address of a data processing device
responding to said object search and transfer service
query in a list of devices facilitating a remotely directed
search for and transfer of a data object.

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4. The method of claim 1 wherein the step of identifying a discovered data
processing device that facilitates at least one of a remotely directed search for
10 and transfer of a data object comprises the steps of:

(a) transmitting an object search and transfer service query to
a discovered data processing device;

(b) including an address of a data processing device
responding to said object search and transfer service
query in a list of devices facilitating a remotely directed
search for and transfer of a data object, and

15 (c) including in said list of devices facilitating a remotely
directed search for and transfer of a data object an
address of another device identified as a device
facilitating a remotely directed search for and transfer of a
data object in said response to said object search and
transfer service query by said device responding to said
query.

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25 5. The method of claim 1 wherein the step of searching an identified data
processing device for said object comprises the steps of:

(a) transmitting a search request including a user specified

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search parameter to a data processing device identified
as facilitating a search for and transfer of a data object;
and

(b) receiving a response to said search request from a data
processing device identifying a data object having a
relation to said search parameter.

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6. The method of claim 5 further comprising the step of displaying to a user an
object identifier of said data object identified in said response.

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7. The method of claim 5 wherein said response comprises an object name
associated with a data object having a relation to said search parameter.

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8. The method of claim 5 wherein said response includes a unique object
identifier associated with a data object having a relation to said search
parameter.

9. The method of claim 5 wherein said response comprises an address of
another device on which said data object is located.

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10. The method of claim 1 wherein the step of selecting an identified data
processing device that is a location of said object as said source device
comprises the steps of:

(a) transmitting a transfer availability query to a device that is
a location of said object and that facilitates data object
transfer;

(b) receiving a response to said transfer availability query,
said response including a measure of an availability of
said device to transfer said object; and

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(c) selecting as said source device a responding device optimizing said measure of availability.

11. The method of claim 10 wherein said measure of availability comprises a
5 measure of data transfer throughput.

12. The method of claim 1 wherein the step of transferring said object from said source device to said destination device over said communication channel comprises the steps of:
10 (a) determining an availability of said source device to transfer a data object;
(b) transmitting to said source device a request to transfer said object; and
(c) receiving at said destination device data of said object transferred over said communication channel.
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13. The method of claim 12 wherein the step of receiving at said destination device data of said object transferred over said communication channel comprises the steps of:
20 (a) receiving a portion of said data of said object and an identifier of said portion of said data; and
(b) preserving said identifier of said portion of said data.

14. The method of claim 1 further comprising the steps of:
25 (a) identifying a portion of said object not transferred to said destination device from said source device;
(b) identifying a second source device having a second portion of said object that has not been transferred to said destination device; and

(c) requesting transfer of said second portion of said object from said second source device to said destination device.

5 15. The method of claim 14 wherein the step of identifying a portion of said object not transferred to said destination device from said source device comprises the steps of:

(a) including with data of said object a measure of a quantity of data comprising said object; and

(b) comparing a measure of said data received by said destination device to said measure of said quantity of data comprising said object.

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16. The method of claim 15 wherein the step of including with data of said object a measure of a quantity of data comprising said object comprises the step of including with an object a total number of bytes of data for an object comprises an ordered sequence of said bytes data.

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17. A method of transferring an object from a source device to a destination device over an ad hoc communication channel, said method comprising the steps of:

(a) transmitting a page message on said communication channel;

(b) including an address of a device responding to said page message in a device list;

(c) transmitting an object search and transfer service query to a device identified in said device list;

(d) including an address of a data processing device responding to said object search and transfer service

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query in a list of devices facilitating a search and transfer
of a data object;

(e) transmitting a search request including a user specified
search parameter to a data processing device identified in
said list of devices facilitating a search for and transfer of
a data object;

(f) receiving a response to said search request from a data
processing device identifying a data object having a
relation to said search parameter;

(g) transmitting a transfer availability query to a device that is
a location of said object identified by a user;

(h) receiving a response to said transfer query including a
measure of availability of a device to transfer said object;

(i) selecting as said source device a responding device
maximizing said measure of availability;

(j) transmitting to said source device a request to transfer said
object; and

(k) receiving at said destination device data of said object
transferred over said communication channel.

18. The method of claim 17 further comprising the step of displaying to a user an object identifier of said data object identified in said response to said search request.

19. The method of claim 17 wherein said response to said search request comprises an object name associated with a data object having a relation to said search parameter.

20. The method of claim 17 wherein said response to said search request

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includes a unique object identifier associated with a data object having a relation to said search parameter.

21. The method of claim 17 wherein said response to said search request
5 comprises an address of another device on which said data object is located.
22. The method of claim 17 wherein said measure of availability included in said response to said transfer query comprises a measure of data transfer throughput.

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23. The method of claim 17 wherein the step of receiving at said destination device data of said object transferred over said communication channel comprises the steps of:
 - (a) receiving a portion of said data of said object and an
15 identifier of said portion of said data; and
 - (b) preserving said identifier of said portion of said data.
24. The method of claim 17 further comprising the steps of:
 - (a) identifying a portion of said object not transferred to said
20 destination device from said source device;
 - (b) identifying another source device having another portion of said object that has not been transferred to said destination device; and
 - (c) requesting transfer of said another portion of said object from said another source device to said destination device.

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25. The method of claim 17 wherein the step of identifying a portion of said object not transferred to said destination device from said source device comprises the steps of:

- (a) including with data of said object a measure of a quantity of data comprising said object; and
- (b) comparing a measure of said data received by said destination device to said measure of said quantity of data comprising said object.

10 26. The method of claim 25 wherein the step of including with data of said object a measure of a quantity of data comprising said object comprises the step of including with an object a total number of bytes of data for an object comprises an ordered sequence of said bytes data.

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